

Friday, 10/13/2006 9:26:44 AM
Kim Johnston

Process Sheet

Order Number : CU-DAR001 Dart Helicopters Services
 Estimate Number : 28956
 P.O. Number : *NA*
 This Issue : 10/13/2006 S.O. No. : *NA*
 Prsht Rev. : *NA*
 First Issue : *NA* Type : LANDING GEAR
 Previous Run : 28955

Drawing Name : EC 135 SKIDTUBE ASSEMBLY

Part Number : D135751011

Drawing Number : D3507 REV *1 B/A 12-18*

Project Number : N/A

Drawing Revision : A

Material : *NA*

Due Date : 11/15/2006

Qty: 1 Um: Each

Written By : *NA*
 Checked & Approved By : *NA*
 Comment : Est Rev: A 06-06-21 New Issue JLM



Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP D135-751-011 CHG001 *2/12/19*

2.0 D2962150 3.540 Outer Tube, Extrud



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2962-150 Extrusion *B27774 DP 6-11-16*

3.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Determine square end of tube and deburr

2-Drill #30 pilot holes using DT8678. Do not open holes.

3- Deburr holes. *N/A*

4.0 BENDING BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per program on CNC Bender and Dwg D3507. Use 5/16" locator pin on buggy "A": *N/A*

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut Fwd end of the tube using DT8185

2-Cut Aft end at VC using DT8185

3-Deburr ends

4-Drill Aft & Fwd Cap holes using DT8678

5-Locate DT8870 & Drill Ground wire hole on top of Tube.

6-Locate DT8870 with 3/16cleco in Ground wire hole ,then Pilot Drill all X-Bolt holes using 3/16" drill.

7-Open Aft & Fwd Cap holes using .208" drill.

8-Drill pilot holes for wearplates using Dt8868

9-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3507.

10-Bore out aft end of tube as per Dwg D3507 & Detail "B".

11-Deburr holes.

6-11-16

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/02/280

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

fm 07-02-280

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

07-02-28

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



Seq. #:	Machine Or Operation:	Description :
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9.0	D35043	CROSSBOLT SPACER
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

CROSSBOLT SPACER

Batch: B-28034

10.0	D35041	CROSSBOLT SPACER
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

CROSSBOLT SPACER

Batch: B-31234

11.0	D35051	WEB
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEB

Batch: B28962 Pm 07-03-01 (1)

12.0	D35061	DOUBLER
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

DOUBLER

Batch: B28963 Pm 07-03-28 (1)

13.0	D35063	DOUBLER
------	--------	---------



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

DOUBLER

Batch: B28964 Pm 07-03-28 (1)

14.0	MS20601AD4W3	Rivet
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Comment: Qty.: 12.0000 Each(s)/Unit Total : 12.0000 Each(s)

Rivet

Batch: M8325 Pm 07-03-28 (1)

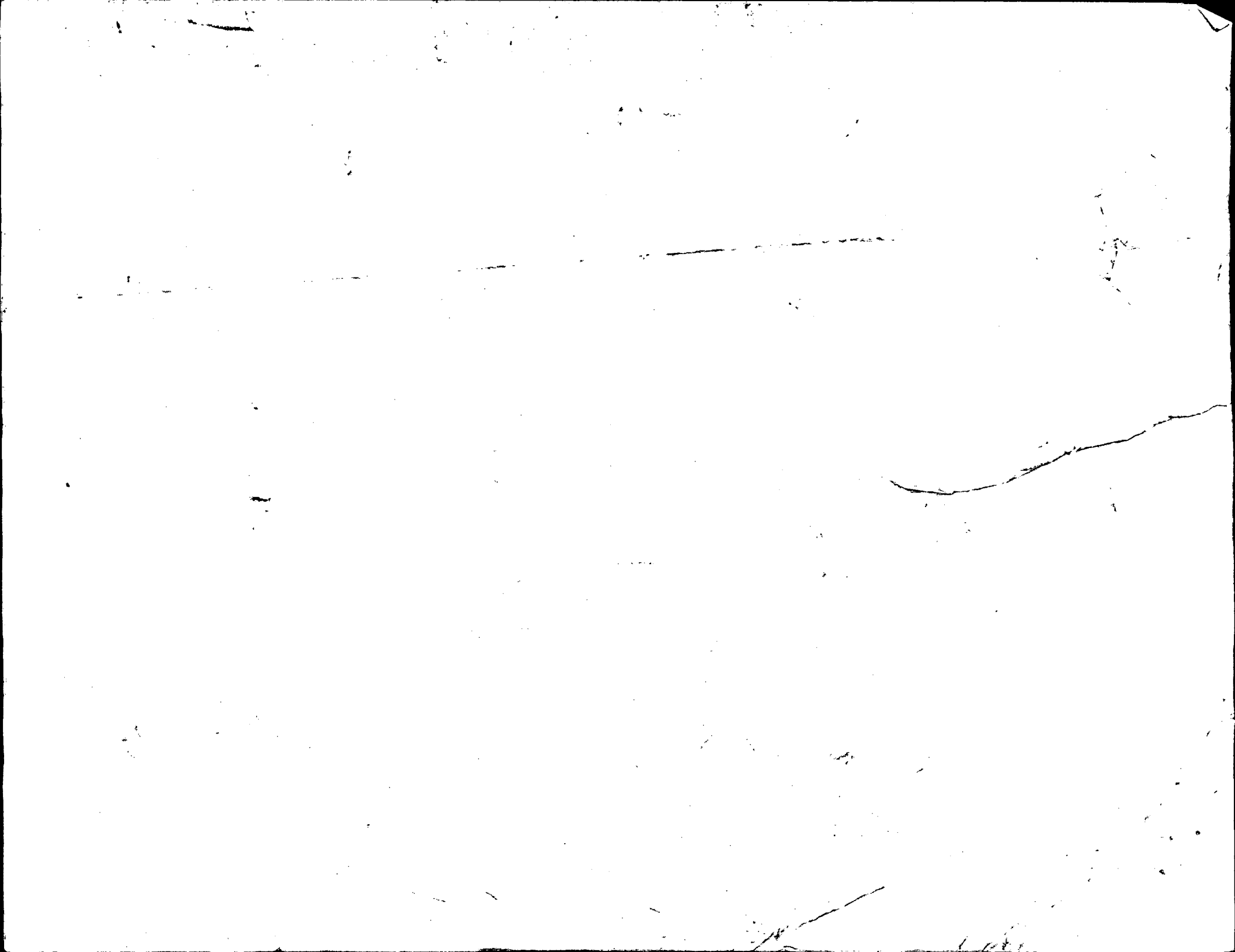
15.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Open X-Bolt holes to .375"(2Places) & .500"(2Places) as per Dwg D3507. and Detail "F" Pm 07-02-28 (1)

2-Counter Sink X-BOLT holes as per Dwg D3507 Pm 07-02-28 (1)



Date: Monday, 12/18/2006 1:21:24 PM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



Seq. #: Machine Or Operation: Description :

3-Debur and blow out chips from inside of tube. *Pm '07-02-280*

4-Bond web as per Dwg D3507 & QSI 015

A/R 241 Sike Flex Batch: *m103497*
Exp Date: *07-10-01*

Pm '07-03-010

5-Weld x-bolt (D3504-1/-3) spacers as per Dwg D3507 and Detail C-C & D-D.

A/R AL ROD Batch: *M103317* *BE 07-03-26*

6-Grind welds flush *BE 07-03-26*

7-Drill Rivet Holes as per Dwg D3507 Using D18871A&B *BE 07-03-26*

8-Debur Rivet holes. *BE 07-03-26*

Tools: E

16.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

07/03/28 0

17.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Pm '07-03-280

1-Rivet D3506-1/-3 as per Dwg D3507.

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07/03/28 0

19.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

M105068 BR/FL

07-08-21

PRESS WASH BR/FL 07-08-20

20.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FL 07/08/27 0

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



See w/o # 36167

Seq. #:

Machine Or Operation:

Description :

21.0

ALS71032130

Insert



Comment: Qty.: 38.0000 Each(s)/Unit Total : 38.0000 Each(s)

Insert

Batch: m102475

FL

22.0

ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert

Batch: m19393

FL

23.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Wearplate & Ground Wire inserts as per Dwg D3507.

FL 07/08/28 (1)

24.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect Inserts

En 07/08/08 (N)

25.0

D2965

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: B31392

See w/o 36167

AS 04/12/19

(1)

26.0

D29653

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

27.0

D35081

WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch: B31196

FL

Date: Monday, 12/18/2006 1:21:25 PM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



* see w/b # 36/67 P

Seq. #: Machine Or Operation: Description :

28.0 D35083 WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch: B31196

FL

29.0 D35085 WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch: B31197

FL

30.0 D35087 WEARPLATE



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPLATE

Batch: B31198

FL

31.0 D35581 GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

BATCH: B29998

FL

32.0 D35583 GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

BATCH: B29999

FL

33.0 D35585 GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

BATCH: B30000

FL

34.0 D35587 GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

GASKET

BATCH: B30001

FL

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



*# See w/p #3667**

Seq. #: Machine Or Operation: Description :

35.0 D3492041 PLUG ASSEMBLY



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
PLUG ASSEMBLY
Batch: *D33075*

FL

36.0 D3492047 PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
PLUG ASSEMBLY
Batch: *D28961*

FL

37.0 ~~AN660D10L~~ *AN960C10L* Washer



Comment: Qty.: 35.0000 Each(s)/Unit Total : 35.0000 Each(s)
Washer
Batch: *m104537*

FL

38.0 AN3C4A BOLT



Comment: Qty.: 31.0000 Each(s)/Unit Total : 31.0000 Each(s)
BOLT
Batch: *m105407*

FL

39.0 AN3C5A Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
Bolt

40.0 HAND FINISHING1 HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Inspect for Foreign objects

2-Install Fwd & Aft caps as per Dwg D3507 And Detail "A" & "B"

A/R 241 Sika Flex Batch: _____
Exp Date: _____

3-Install Wearplates as per Dwg D3507 ,seal screws with sikaflex.

Note:Install (1) screw and (1) washer on Ground Wire insert on top of tube
Do not Install Scews where indicated on Dwg(Note #6)

A/R 241 Sika Flex Batch: _____
Exp Date: _____

Date: Monday, 12/18/2006 1:21:25 PM
User: Jean-Luc Menard

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



Seq. #:

Machine Or Operation:

Description :

4-Install Plug assemblys as per Dwg D3507.

5- Wing Walk as per Dwg D3043 and QSI 005 4.4

41.0

QC5

INSPECT WORK TO CURRENT STEP



See



Comment: INSPECT WORK TO CURRENT STEP

w/lot 36167

42.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

43.0

D35121

WEARPLATE



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WEARPLATE

Batch:

360180

No Great

AS 07/12/19

(X)

44.0

M827039108

AN3C4A

Screw



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Screw Bolt.

Batch:

65559

AS 07/12/19

(X)

45.0

AN960JD10L

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch:

1104374

AS 07/12/19

(X)

46.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

See w/lot 36167

47.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D135-751-011

Location:

PPP Rev:

PPP

36167
36167 07/9/21

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: EC 135 SKIDTUBE ASSEMBLY

Job Number: 28956

Part Number: D135751011

Job Number:



Seq. #:

Machine Or Operation:

Description :

48.0

QC21

FINAL INSPECTION/W/O RELEASE



①

Comment: FINAL INSPECTION/W/O RELEASE

Done 12/24

Job Completion



U 07.12.24



DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED H	APPROVED H	DRAWING NO. D3507	REV. B SHEET 1 OF 2
DATE 06.11.01		TITLE EC 135 SKIDTUBE	SCALE NTS
A	06.04.21	NEW ISSUE	
B	06.11.01	ADD GASKET, CHANGE HARDWARE MAT'L	

RELEASED

06.12.12

Qty	Part Number	Description
X	D3507-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2965	CAP
1	D2965-3	CAP
4	D3492-041	PLUG ASSEMBLY
2	D3492-047	PLUG ASSEMBLY
2	D3504-1	CROSS BOLT SPACER
1	D3504-3	CROSS BOLT SPACER
1	D3505-1	WEB
4	D3506-1	DOUBLER
2	D3506-3	DOUBLER
1	D3508-1	WEARPLATE
1	D3508-3	WEARPLATE
1	D3508-5	WEARPLATE
1	D3508-7	WEARPLATE
1	D3558-1	GASKET
1	D3558-3	GASKET
1	D3558-5	GASKET
1	D3558-7	GASKET
38	AELS-1032-130	INSERT
1	AELS-1032-225	INSERT
31	AN3C4A	BOLT
4	AN3C5A	BOLT
35	AN960C10L	WASHER
12	MS20601AD4W3	RIVET

GENERAL NOTES:

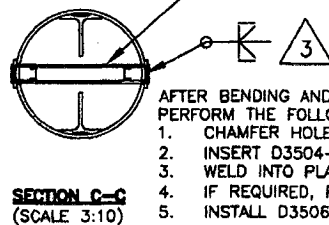
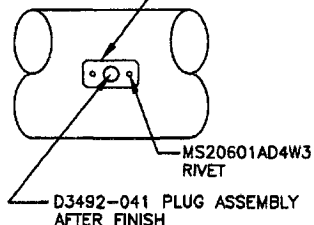
- 1) ALL DIMENSIONS ARE IN INCHES
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) WELDING TO BE DONE PER DART QSI 004.
- 4) INSERT D3505-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 5) USE DART DRILL TEMPLATE DT8868 TO LOCATE AND DRILL $\varnothing 0.297$ HOLES (38 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION C-C (38 PLACES) AFTER FINISH. SEAL WEARPLATE SCREWS WITH SIKAFLEX-241/-291.
- 6) DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- 7) FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3505-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4 (OPTIONAL)

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D3506-1 DOUBLER

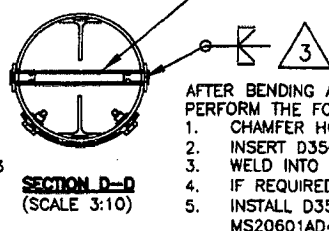
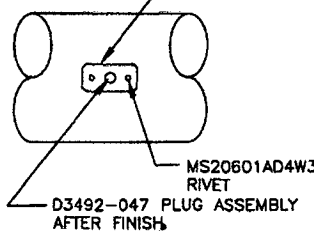
D3504-1 CROSS BOLT SPACER



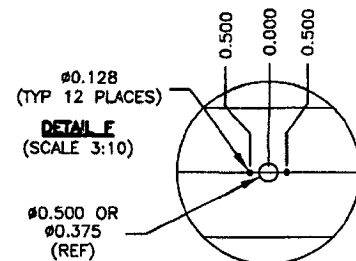
- AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.500 HOLES ONLY:
1. CHAMFER HOLE 0.030 x 45°
 2. INSERT D3504-1 CROSS BOLT SPACER (2 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. IF REQUIRED, PASS #0.404 ("Y" DRILL) THROUGH HOLE
 5. INSTALL D3506-1 DOUBLER (4 PLACES) USING MS20601AD4W3 RIVET (8 PLACES)
 6. AFTER FINISH, INSTALL D3492-041 PLUG ASSEMBLY (4 PLACES)

D3506-3 DOUBLER

D3504-3 CROSS BOLT SPACER

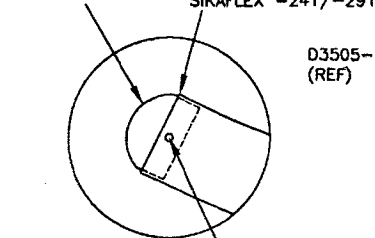


- AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.375 HOLES ONLY:
1. CHAMFER HOLE 0.030 x 45°
 2. INSERT D3504-3 CROSS BOLT SPACER (1 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. IF REQUIRED, PASS #0.277 ("J" DRILL) DRILL THRU HOLE
 5. INSTALL D3506-3 DOUBLER (2 PLACES) USING MS20601AD4W3 RIVET (4 PLACES)
 6. AFTER FINISH, INSTALL D3492-047 PLUG ASSEMBLY (2 PLACES)



D2965-3 CAP

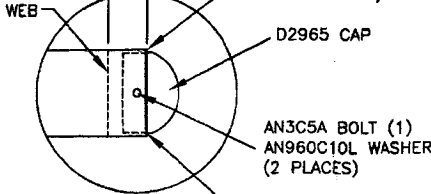
SEAL WITH SIKAFLEX -241/-291



AN3C5A BOLT (1)
AN960C10L WASHER (1)
(2 PLACES)

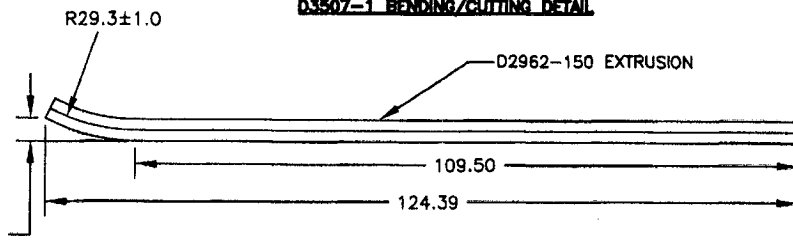
1.60

SEAL WITH SIKAFLEX -241/-291

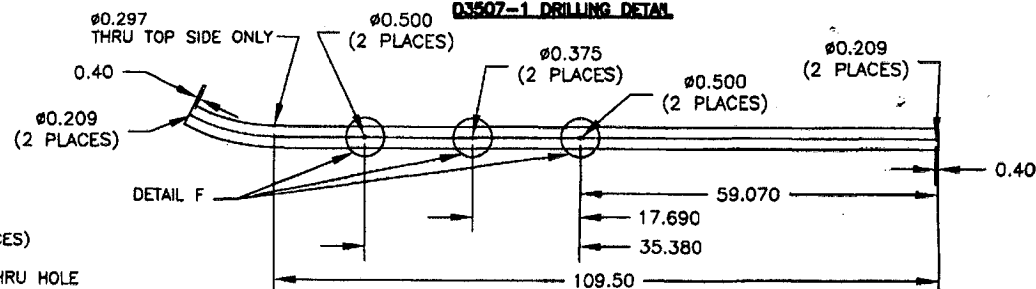


BORE OUT END OF SKIDTUBE
TO 0.05 DEPTH
AND 0.090 WALL

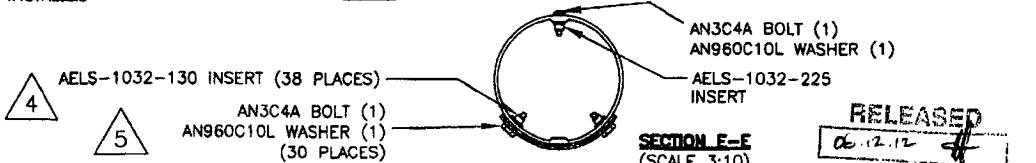
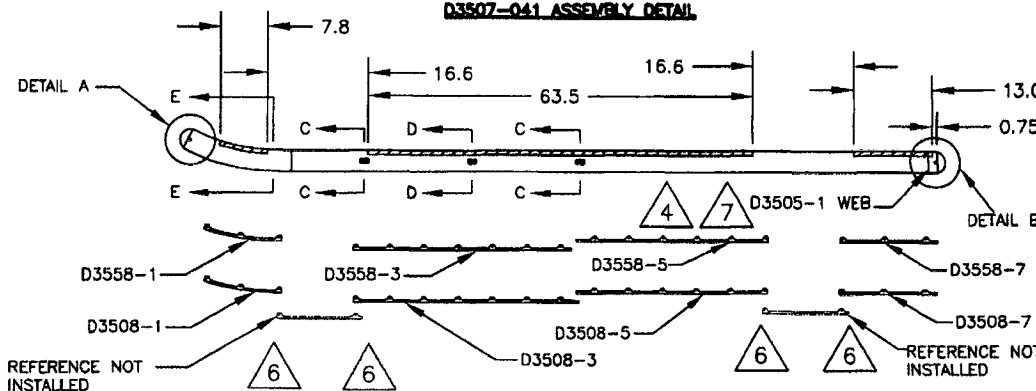
D3507-1 BENDING/CUTTING DETAIL



D3507-1 DRILLING DETAIL



D3507-041 ASSEMBLY DETAIL



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DART AEROSPACE USA, INC.

DESIGN PH	DRAWN BY PH	DART DART AEROSPACE USA, INC. PORT HADLOCK, OH	REV. B
CHECKED H	APPROVED H	DRAWING NO. D3507	SHEET 2 OF 2
DATE 06.11.01	TITLE EC 135 SKIDTUBE ASSEMBLY	SCALE 1:20	

RELEASED
06.12.12

NO. 100

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name Barclay Elliott
Joint Welding Procedure Tig
Part number and Job number 135751011/B 28756

TEST WELDS REQUIRED

BASE METAL Alum WELDING PROCESS Tig
Penetration Complete [] Partial [☒]
Current AC [☒] DC [] Single Weld [☒] Double Weld []
Backing YES [] NO [☒]

	Position	Vertical	Down []	Up []
Sheet Groove	1G []	2G []	3G []	4G []
Tube Groove	1G []	2G []	5G []	6G []
Sheet Fillet	1F []	2F []	3F []	4F []
Tube Fillet	1F []	2F []	4F []	5F []

Crossbolt Spacer Welded into _____ Skidtube

TEST RESULTS

Visual Pass [☒] Fail []
Penetration Pass [☒] Fail []
Crossbolt Spacer Pass [☒] Fail []

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 07/03/26 Qualifier [Signature]